GI20Editor

user manual

version 2.1.0

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Introduction

Features

GI20Editor is a software editor for the Roland GI-20 GK-MIDI guitar interface.

It's main task is to receive a MIDI "bulk dump" (in the GI-20 manual terminology) with all the device's settings, display and modify them, then send data back to the unit.

But it can do much more than this to ease your life with this powerful but not so user friendly piece of hardware.

Its main features are:

- easy access to all the GI-20 parameters
- save and reload settings as documents, allowing backups and fast switching between completely different configurations
- import and export GI-20 dump files
- patch related copy, paste and swap commands, plus a powerful 'paste special' function to apply only selected changes, possibly extending them to all patches at once
- direct connection to a MIDI synthesizer
- on-the-fly substitution of GI-20 bank/program messages to allow rapid testing of different sounds without the need to do a “bulk load”
- optional MIDI system exclusive, bank/program change and control change messages sent at patch selection
- string grouping for faster editing
- MIDI remote control

GI20Editor is a 32/64-bit Intel fat binary that runs on Mac OS X 10.6.6 (Snow Leopard) and later versions.

For the impatient

Make sure that the GI-20 unit is connected and powered.

Assign at least the appropriate “GI-20 INPUT” and “GI-20 OUTPUT” devices in the "devices" page, using the "MIDI Preferences" button.

On the GI-20 unit, turn the “PARAMETER” knob to “BULK” and press “WRITE”.

If everything is properly connected and set, GI20Editor will show a progress bar for a few seconds, indicating that it is receiving the bulk dump. When the bar disappears, you can start tweaking.

For the less impatient

This application is obviously designed to easily manipulate the numerous parameters of the GI-20, but much time was also spent trying to improve the user experience with it, beyond this basic feature.

From the GI20Editor point of view, the heaviest limitation of the GI-20 is its inability to receive or transmit settings individually and without resorting to a particular mode ("bulk") that must be set manually.

Default document

The first thing you can do to overcome this is to receive a bulk dump from the GI-20, save it to a file and save that file as the "default document", using the "Save As Default" command of the "File" menu. From this moment on, whenever you start the GI20Editor application, it will load that document instead of just creating a new, empty one. To reset the default document to an empty one, you can obviously just choose "New" and then "Save As Default". Please note that DEMO versions don't load the default document at startup.

Synchronized patch selection

Each time you select a patch in GI20Editor, it sends an equivalent command command to the GI-20 unit so that, as long as data are kept synchronized, all settings for the patch can be checked right away.

Unfortunately, the GI-20 responds to Program Change messages only when it receives them through the 5-pin MIDI connector and ignores them if they come from the USB connection. So, if you want to use this feature, you will be forced to use the MIDI connection, at least from the Mac to the GI-20.

Synthesizer output

Some interesting capabilities are linked to the ability to insert the GI20Editor application between the GI-20 and the synthesizer, using the "SYNTHESIZER OUTPUT" setting in the "devices" page.

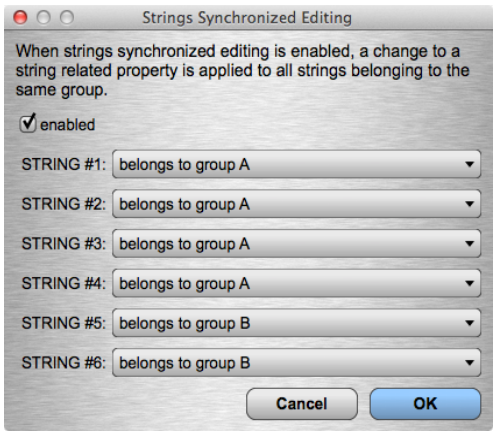
First, this allows you to drive a hardware synthesizer that is connected to your Mac but not directly to the GI-20, without resorting to an additional "patch bay" application.

More important, this allows GI20Editor to replace some of the messages coming from the GI-20, so that a quick test of different settings (those belonging to the "CC#0, CC#32, PC#" panel of the "patches" page) becomes possible without the need to perform a "bulk load" every time. See the "IMMEDIATE MODE" option of the "devices" page for more information. Later in this manual, the icon is used to identify settings that are influenced by the state of the "IMMEDIATE MODE" option.

Finally, each patch can optionally send a MIDI system exclusive message and additional bank/program change messages to properly setup the synthesizer before actually selecting the patch on the GI-20.

Later in this manual, the icon is used to identify settings that are exclusively related to the synthesizer output feature.

Strings synchronized editing


Strings Synchronized Editing
When strings synchronized editing is enabled, a change to a string related property is applied to all strings belonging to the same group.
enabled
STRING #1: belongs to group A
STRING #2: belongs to group A
STRING #3: belongs to group A
STRING #4: belongs to group A
STRING #5: belongs to group B
STRING #6: belongs to group B
Cancel
OK

This feature comes in handy when experimenting with strings related settings. Instead of being forced to individually set the parameters of each string, it is possible to have a change to any one of the strings to be automatically applied to the others.

The involved settings are "SENSITIVITY" in the "system" page, "TRANSPOSE", "BEND RANGE", "CC#00", "CC#32" and "PC#" in the "patches" page and "BANKS, PROGRAMS" in the "extra" page.

As often happens to define different settings for the strings, you can divide them into 3 distinct groups. If SSE is enabled and a string belongs to a group, all its relevant controls are drawn with a specific color, which is green for group A, blue for group B and yellow for group C.

To open a window to setup your Strings Synchronized Editing preferences, select the "Strings Synchronized Editing Options..." command from the "Edit" menu. You can also just enable or disable this option with the "Strings Synchronized Editing" command from the same menu.

Later in this manual, the sse icon is used to identify settings that are influenced by the state and the configuration of the strings synchronized editing options.

Copy, paste and swap patches

With the "Copy Patch" and "Paste Patch" commands of the "Edit" menu, the settings of a patch can be easily duplicated. As the name implies, the "Swap Patches..." command exchanges settings between two patches. These commands are only available when the current page is either "patches" or "extra".

Paste special

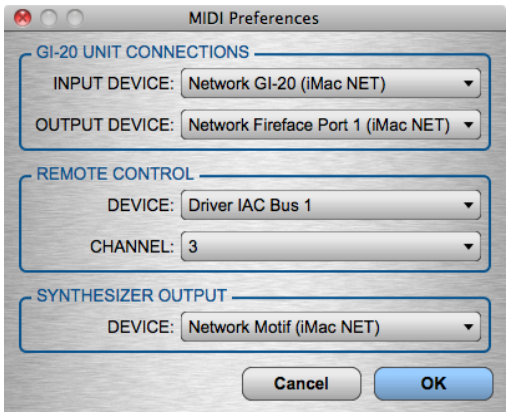
The "Paste Special..." of the "Edit" menu allows you to paste only some of the settings of a patch. It opens a window where each logical group of settings can be individually selected and you can also choose to paste the selected settings to all patches at once.

Bulk import & export

GI20Editor saves its documents in the ".gie" proprietary file format. For obvious reasons, this format does not coincide with that of a "bulk dump" file directly produced by the GI-20, that contains just a few MIDI system exclusive messages and that GI20Editor identifies as ".syx". See pages 29 through 31 of the GI-20 Owner's Manual to learn about "bulk dump" and "bulk load" operations.

If you need to load an existing "bulk dump" into GI20Editor or, for any reason, you want to save the current settings in this format, you can use the "Import GI-20 bulk..." and "Export GI-20 bulk..." of the "File" menu. Just remember that this format won't contain any of the settings found in the "extra" page of Gi20Editor.

MIDI remote control



GI20Editor recognizes message PC to select the current patch and message CC#16 to select the next or previous patch.

I can also recognize and retransmit the CC messages listed at page 15 of the GI-20 Owner's Manual to the GI-20 unit. Note that for this to work, you will have to synchronize the GI20Editor control input channel and the GI-20 MIDI Control Channel or set the latter to "omni".

To open the MIDI preferences dialog, select "MIDI Preferences..." from the "GI20Editor" menu or click the button with the same name in the "devices" page.

The "REMOTE CONTROL" section lets you choose the device and channel from which to receive control messages. Please see the "MIDI implementation reference" section for a complete list of the messages that GI20Editor understands.

ATTENTION: when you assign the devices, be careful not to create a loop!

For example, assume you have set the same device both as source for "REMOTE CONTROL" and as recipient for "SYNTHESIZER OUTPUT".

At this point, a patch change on the GI-20 could originate a Program Change message, which would be received by GI20Editor and correctly retransmitted to "SYNTHESIZER OUTPUT".

However, if the "SYNTHESIZER OUTPUT" device were set to relay incoming messages, the message would be received again by the "REMOTE CONTROL" input, causing a patch change in GI20Editor, which would send the same message to the GI-20, and so on.

Turning off the "ENABLED" options of the "REMOTE CONTROL" and "SYNTHESIZER OUTPUT" panels in the "devices" page may help in detecting and solving MIDI loop problems.

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Changes since version 2.0.0

Sandboxing

As prescribed by the Mac App Store rules, GI20Editor is now a "sandboxed" application. Discussing the OS X sandbox in detail is beyond the scope of this manual, but I just want to point out that to make the application compatible with the sandbox AND maintain all its functions unaltered would have meant losing compatibility with OS X 10.6 (Snow Leopard), something I was not willing to do.

So these are the consequences of "sandboxing":

- the preferences file stored by GI20Editor versions up to and including 2.0.0 will be moved to its new location inside the application sandbox the first time you start the application; if, for any reason, you want to keep your old preferences file, you must duplicate it and store it away from the (now obsolete) application preferences folder in Library/Application Support before you launch the new version;
- the "default document" is not just a reference to some user specified document anymore; instead, it is a concrete document residing in the application sandbox; to keep using the default document from previous versions, just open it normally, then choose the "Save As Default" command of the "File" menu;
- the "Open Recent" menu remembers documents opened during the current session, but not those that were opened in previous sessions;
- since the standard version and the demo version use different sandboxes, they do not share preferences anymore.

New features

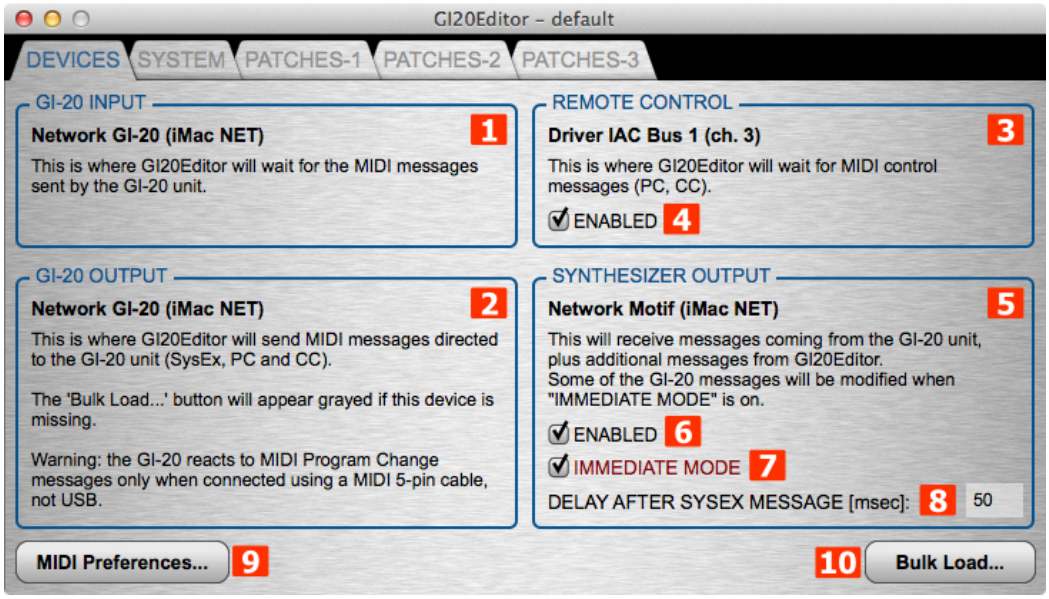
- the "patches" page is now called "patches-1", while the "extra" page is called "patches-2"
- there is a new "patches-3" page with 8 panels, each containing 6 sliders, one for each string; you can use these to send specific MIDI Control Change messages to the "synthesizer output" device each time a patch is selected or at any time, moving the sliders when "immediate mode" is on
- the "system" and the "patches" pages now contain a checkbox to switch the "strings synchronized editing" (SSE) feature on or off and a button to access its options

User interface

The application interface is organized in five pages: “devices”, “system”, “patches-1”, “patches-2” and “patches-3”.

The “devices” page

The purpose of this page is to manage the application's MIDI connections, plus some less frequently used options.


GI20Editor – default
DEVICES
SYSTEM
PATCHES-1
PATCHES-2
PATCHES-3
GI-20 INPUT
Network GI-20 (iMac NET)
1
This is where GI20Editor will wait for the MIDI messages sent by the GI-20 unit.
REMOTE CONTROL
Driver IAC Bus 1 (ch. 3)
3
This is where GI20Editor will wait for MIDI control messages (PC, CC).
ENABLED
4
GI-20 OUTPUT
Network GI-20 (iMac NET)
2
This is where GI20Editor will send MIDI messages directed to the GI-20 unit (SysEx, PC and CC).
The 'Bulk Load...' button will appear grayed if this device is missing.
Warning: the GI-20 reacts to MIDI Program Change messages only when connected using a MIDI 5-pin cable, not USB.
SYNTHESIZER OUTPUT
Network Motif (iMac NET)
5
This will receive messages coming from the GI-20 unit, plus additional messages from GI20Editor.
Some of the GI-20 messages will be modified when "IMMEDIATE MODE" is on.
ENABLED
6
IMMEDIATE MODE
7
DELAY AFTER SYSEX MESSAGE [msec]:
8
50
MIDI Preferences...
9
10
Bulk Load...

The page contains:

1. A “GI-20 INPUT” panel, showing the MIDI input device currently used to receive messages from the GI-20 unit. When the chosen device is not available, its name is shown in red and the word "offline" is appended.

   Please note that a "bulk dump" coming from the GI-20 unit is automatically recognized. See page 29 of the GI-20 Owner's Manual to learn how to produce a "bulk dump".

2. A “GI-20 OUTPUT” panel, showing the MIDI output device currently used to send messages to the GI-20 unit. When the chosen device is not available, its name is shown in red and the word "offline" is appended.

3. A “REMOTE CONTROL” panel, showing the MIDI input device currently used to receive control messages. When the chosen device is not available, its name is shown in red and the word "offline" is appended.

4. When this option is turned off, all messages received from the “REMOTE CONTROL” device will be ignored.

5. A “SYNTHESIZER OUTPUT” panel, showing the MIDI output device currently used to retransmit all messages received from the GI-20 unit (excluding MIDI system exclusive), plus other messages directly generated from GI20Editor. When the chosen device is not available, its name is shown in red and the word "offline" is appended. If a valid device is not available, all controls in the panel are disabled.

6. When this option is turned off, no messages will be sent to the “SYNTHESIZER OUTPUT” device.

7. When a patch change occurs on the GI-20, the unit sends a number of messages to its output. First, RPN messages to set the pitch bend range and the master fine tuning are sent. Then, if the “PROGRAM CHANGE MASK” option is turned off, the unit sends the expected CC#0, CC#32 and PC messages from the “patches” page. If “TRANSMISSION MODE” is “mono”, a group of messages is sent for each string. If “TRANSMISSION MODE” is “poly”, just a single group is sent.

   Normally, GI20Editor receives these messages and restransmits them to the “SYNTHESIZER OUTPUT”. But when this option is turned on, it discards the CC#0, CC#32 and PC messages coming from the GI-20 and instead synthesizes and transmits other messages, that appropriately reflect the current CC#0, CC#32 and PC settings in the editor.

   When this option is turned on, these messages are also sent when a CC#0, CC#32 or PC setting in the “patches” page (or the equivalent “BANKS, PROGRAMS” settings in the “extra” page) changes. In this case GI20Editor also sends pitch bend range and master fine tuning RPN messages, based on the current settings in the editor.

   This is quite useful to quickly test different setups without the need to perform a "bulk load" every time.

   Finally, when this option is turned on, the names of the settings involved in the construction of the messages sent from GI20Editor are displayed in red to be easily identified.

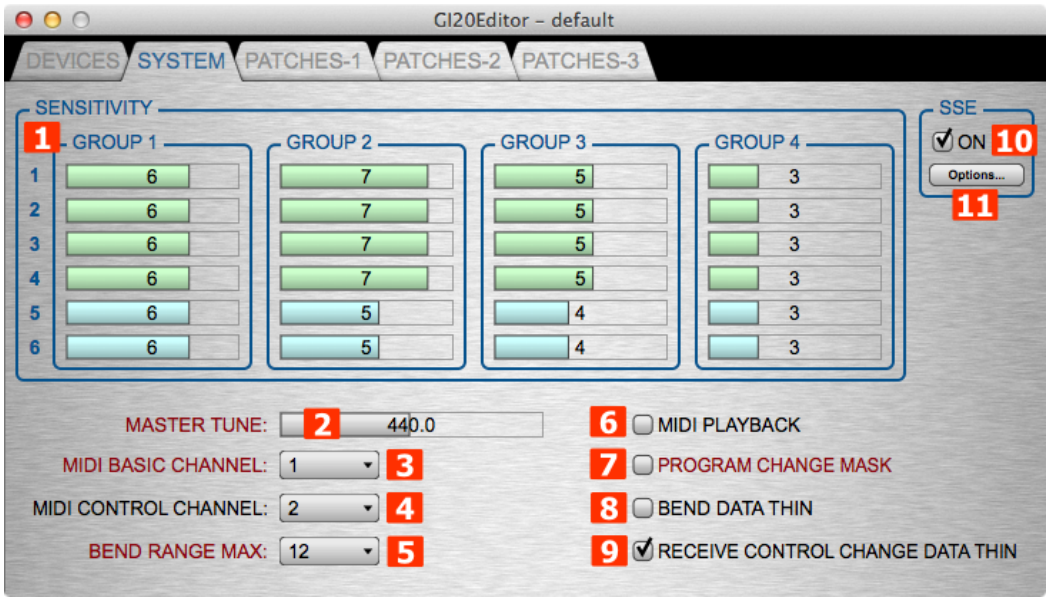
8. As described in the"extra" page section, each GI20Editor patch can send an optional MIDI system exclusive message when it is selected. It is possible that this message engages the target device for a considerable time, preventing it from reacting appropriately to subsequently transmitted messages. You can then use this field to specify the duration of a pause, in milliseconds, inserted immediately after sending the system exclusive message and before sending subsequent messages. Of course, in the absence of a system exclusive message, the pause will not be observed.

9. A “MIDI Preferences...” button, that opens a window for setting the MIDI connections. This is equivalent to the command of the same name in the "GI20Editor" menu.

10. A “Bulk Load” button, to send the current settings to the GI-20 unit. This button is dimmed when the “GI-20 OUTPUT” device is not available. It displays a simple dialog that reminds you how to setup the unit for this operation to be successful. See page 30 of the GI-20 Owner's Manual.

The "system" page

The purpose of this page is to manage settings identified as "system parameters" on page 12 of the GI-20 Owner's Manual.



This page contains:

1. sse A "SENSITIVITY" panel, showing the current input sensitivity settings, see page 11 of the GI-20 Owner's Manual.
2. im A "MASTER TUNE" gauge, showing the current reference pitch, see page 28 of the GI-20 Owner's Manual.

   When the "IMMEDIATE MODE" option in the "devices" page is turned on, the name of this menu is written in red. This means that the current setting of this control will be used to build master fine tuning RPN messages sent to "SYNTHESIZER OUTPUT".

   Keep in mind that this only concerns the initialization of these parameters in the synthesizer and does not affect the actual note and pitch bend messages sent by the GI-20.
3. im A "MIDI BASIC CHANNEL" menu, see page 14 of the GI-20 Owner's Manual.

   When the "IMMEDIATE MODE" option in the "devices" page is turned on, the name of this menu is written in red. This means that CC#0, CC#32 and PC# messages will be sent to the "SYNTHESIZER OUTPUT" device according to the current setting of this control.

   Keep in mind that this only concerns the sending of CC#0, CC#32 and PC# initialization messages and does not affect the actual note messages sent by the GI-20.
4. A "MIDI CONTROL CHANNEL" menu, see page 15 of the GI-20 Owner's Manual.
5. im A "BEND RANGE MAX" menu, see page 32 of the GI-20 Owner's Manual.

   When the "IMMEDIATE MODE" option in the "devices" page is turned on, the name of this menu is written in red. This means that the current setting of this control will be used to build pitch bend range RPN messages sent to "SYNTHESIZER OUTPUT".

Keep in mind that this only concerns the initialization of these parameters in the synthesizer and does not affect the actual pitch bend messages sent by the GI-20.

6. A “MIDI PLAYBACK” option, see page 17 of the GI-20 Owner's Manual.
7. im A “PROGRAM CHANGE MASK” option, see page 29 of the GI-20 Owner's Manual.

   When the “IMMEDIATE MODE” option in the “devices” page is turned on, the name of this menu is written in red. This means that CC#0, CC#32 and PC# messages will be sent to the "SYNTHESIZER OUTPUT" device according to the current setting of this control.
8. A “BEND DATA THIN” option, see page 31 of the GI-20 Owner's Manual.
9. A “RECEIVE CONTROL CHANGE DATA THIN” option, see page 32 of the GI-20 Owner's Manual.
10. sse Inside the SSE panel, an “ON” checkbox, to switch the Strings Synchronized Editing feature on or off. This is equivalent to the “Strings Synchronized Editing” command of the "Edit" menu.
11. sse Inside the SSE panel, an “Options...” button, that opens a window to setup the Strings Synchronized Editing preferences. This is equivalent to the “Strings Synchronized Editing Options...” command of the "Edit" menu.

The “patches-1” page

The purpose of this page is to manage settings identified as “patch parameters” on page 13 of the GI-20 Owner's Manual.

This page contains:

1. Within the “MUTE, TRANSPOSE” panel, a set o 6 “MUTE” options, see page 26 of the GI-20 Owner's Manual.
2. sse Within the “MUTE, TRANSPOSE” panel, a set o 6 “TRANSPOSE” gauges, see page 23 of the GI-20 Owner's Manual.
3. sse im A “BEND RANGE” panel, showing the current related settings for each string, see page 23 of the GI-20 Owner's Manual.

When the “IMMEDIATE MODE” option in the “devices” page is turned on, the border of this panel is drawn in red. This means that the current settings of these controls will be used to build pitch bend range RPN messages sent to “SYNTHESIZER OUTPUT”.

Keep in mind that this only concerns the initialization of these parameters in the synthesizer and does not affect the actual pitch bend messages sent by the GI-20.

4. sse im A “CC#0, CC#32, PC#” panel, showing the current related settings for each string. See page 25 of the GI-20 Owner's Manual, where these settings are collectively called “PRG CHANGE”.

   When the “IMMEDIATE MODE” option in the “devices” page is turned on, the border of this panel is drawn in red. This means that CC#0, CC#32 and PC# messages will be sent to the "SYNTHESIZER OUTPUT" device according to the current settings of these controls.

5. An “ASSIGN” panel, showing the current related settings, see page 19 of the GI-20 Owner's Manual.

6. im A “TRANSMISSION MODE” menu, see page 14 (mono/poly modes) of the GI-20 Owner's Manual.

   When the “IMMEDIATE MODE” option in the “devices” page is turned on, the border of this panel is drawn in red. This means that CC#0, CC#32 and PC# messages will be sent to the "SYNTHESIZER OUTPUT" device according to the current settings of these controls.

   Keep in mind that this only concerns the sending of CC#0, CC#32 and PC# initialization messages and does not affect the actual note messages sent by the GI-20.

7. A “SENSITIVITY GROUP” menu, see page 18 of the GI-20 Owner's Manual.

8. A “PLAY FEEL” menu, see page 18 of the GI-20 Owner's Manual.

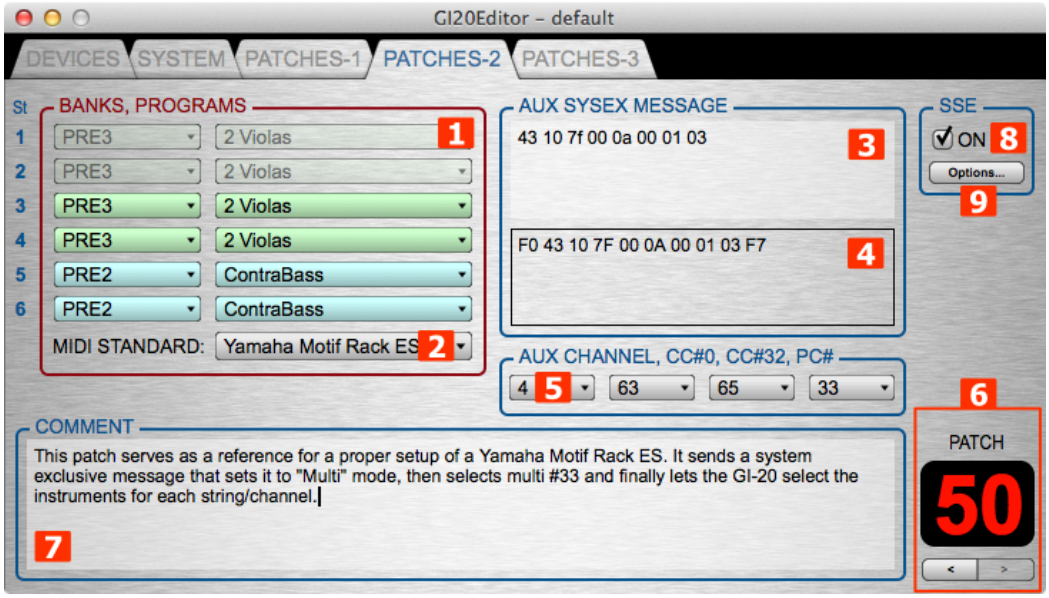
9. A “PATCH” display, showing the currently selected GI20Editor patch. To select another patch, use the buttons below the display or click the display and insert a number between 1 and 50, then press enter.

10. sse Inside the SSE panel, an “ON” checkbox, to switch the Strings Synchronized Editing feature on or off. This is equivalent to the “Strings Synchronized Editing” command of the "Edit" menu.

11. sse Inside the SSE panel, an “Options...” button, that opens a window to setup the Strings Synchronized Editing preferences. This is equivalent to the “Strings Synchronized Editing Options...” command of the "Edit" menu.

The "patches-2" page

The purpose of this page is to manage some special settings peculiar to the GI20Editor.



This page contains:

1. sse im A "BANKS, PROGRAMS" panel, showing the current related settings for each string. These settings are equivalent to those in the "CC#0, CC#32, PC#" panel in the "patches" page, but much more user friendly. Instead of simple numbers, these controls show what sounds those settings actually correspond to, according to the current state of the "MIDI STANDARD" menu.

   When the "IMMEDIATE MODE" option in the "devices" page is turned on, the border of this panel is drawn in red. This means that CC#0, CC#32 and PC# messages will be sent to the "SYNTHESIZER OUTPUT" device according to the current settings of these controls.

2. A "MIDI standard" menu allows to choose the preferred one between those supported by GI20Editor: GM (General MIDI), Roland GS, Yamaha XG and Yamaha Motif Rack ES.

3. so Each GI20Editor patch can send an optional MIDI system exclusive message when it is selected. This may be useful to properly setup a synthesizer. For example, you could send a "F0 43 10 7F 00 0A 00 01 03 F7" sequence to a Yamaha Motif Rack ES to switch it to "multi" mode.

   This editable field only accepts valid MIDI system exclusive sequences, that is, 1- or 2-character hexadecimal values in the range 00-7F, separated by a single space.

   It also accepts two special characters, '$' and '=', that are useful to automatically generate and insert a "Roland checksum" byte in the sequence. Just put a '$' character to mark the beginning of the sequence to be used to compute the checksum and a '=' to mark its end. In the final sequence, the '=' character will be replaced by the checksum.

   If not empty, the MIDI system exclusive sequence is sent before any "AUX CHANNEL, CC#0 CC#32 PC#" panel messages and the PC message sent to the GI-20 unit to select the patch corresponding to that selected in the editor.

   A short delay can be optionally inserted after the system exclusive message is sent. See

"DELAY AFTER SYSEX MESSAGE" in the "devices" page section.

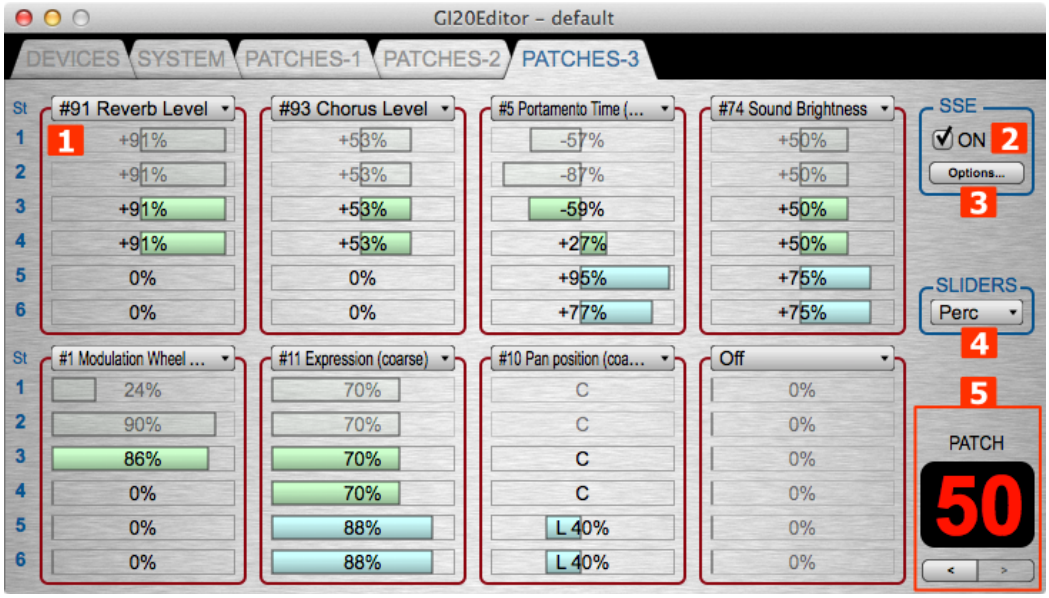
4. so If the message inserted in field #3 is valid, this space will show the actual MIDI system exclusive message that will be sent to the "SYNTHESIZER OUTPUT" device.
5. so An "AUX CHANNEL, CC#0 CC#32 PC#" panel.

   Each GI20Editor patch can send an optional CC#0 CC#32 PC# sequence on a specific channel when it is selected. This may be useful to properly setup a synthesizer. For example, you could send a "CC#0 (63) CC#32 (65) PC# (33)" sequence to a Yamaha Motif Rack ES (already in "multi" mode) to select multi #33.

   If enabled, the CC#0 CC#32 PC# messages are sent before the PC message sent to the GI-20 unit to select the patch corresponding to that selected in the editor.
6. A "PATCH" display, showing the currently selected GI20Editor patch. To select another patch, use the buttons below the display or click the display and insert a number between 1 and 50, then press enter.
7. A "COMMENT" space to jot down useful information about the patch.
8. sse Inside the SSE panel, an "ON" checkbox, to switch the Strings Synchronized Editing feature on or off. This is equivalent to the "Strings Synchronized Editing" command of the "Edit" menu.
9. sse Inside the SSE panel, an "Options..." button, that opens a window to setup the Strings Synchronized Editing preferences. This is equivalent to the "Strings Synchronized Editing Options..." command of the "Edit" menu.

The "patches-3" page

The purpose of this page is to manage some special settings peculiar to the GI20Editor.



This page contains:

1. sse im 8 panels, each containing a menu to select a specific MIDI control change message controller and 6 sliders to define the control value for each string.

   These CC messages are sent to the "synthesizer output" device each time the patch is

selected. If “immediate mode” is on, you can also move the sliders to send the messages in real time. Select “Off” in a panel's menu to avoid sending the related messages.

The sliders' aspect changes according to the type of controller they refer to. So, sliders referring to “Portamento (on/off)” (CC# 65) are shown like switches, while those referring to “Portamento Time” (CC# 5) are shown like actual sliders.

Depending on the controller's type, some synthesizers may interpret the associated control value as absolute or relative to a “default” setting. This is why when you assign one of those controller type to a panel, you will be asked to choose the way the sliders will be drawn. If you change your mind, simply select “Off” in the panel's menu and then select the desired controller type again.

2. sse Inside the SSE panel, an “ON” checkbox, to switch the Strings Synchronized Editing feature on or off. This is equivalent to the “Strings Synchronized Editing” command of the "Edit" menu.
3. sse Inside the SSE panel, an “Options...” button, that opens a window to setup the Strings Synchronized Editing preferences. This is equivalent to the “Strings Synchronized Editing Options...” command of the "Edit" menu.
4. A “SLIDERS” panel with a menu to choose the way numeric values are to be represented. Possible choices are: “Perc” (percentage), “Dec” (decimal) and “Hex” (hexadecimal).
5. A “PATCH” display, showing the currently selected GI20Editor patch. To select another patch, use the buttons below the display or click the display and insert a number between 1 and 50, then press enter.

MIDI Implementation Reference

Functions			Transmitted	Recognized
Basic Channel			1 - 16	1 - 16
Note Number			0 - 127	X
Channel Voice	Note Off event		X	X
	Note On event		O	X
	Polyphonic Key Pressure		X	X
	Control Change	0 Bank Select MSB	O	X
		6 Data Entry MSB	O	X
		16 Patch Up/Down	X	0 – 63 (down) 64 – 127 (up)
		18 General Purpose 3 (GI-20 Expression Pedal)	O	O
		19 General Purpose 4 (GI-20 Foot Switch 1)	O	O
		32 Bank Select LSB	O	X
		38 Data Entry LSB	O	X
		80 General Purpose 5 (GI-20 Foot Switch 2)	O	O
		81 General Purpose 6 (GI-20 GK Volume)	O	O
		82 General Purpose 7 (GI-20 S1 switch)	O	O
		83 General Purpose 8 (GI-20 S2 switch)	O	O
		100 RPN Select LSB	O	X
		101 RPN Select MSB	O	X
		1-31, 33-63, 64-95	pass through	X
	Program Change		O	O
	Channel Pressure		X	X
	Pitch Wheel Change		pass through	X
Channel Mode	All Sound Off		X	X
	Reset All Controllers		X	X
	Local Control		X	X
	All Notes Off		X	X
System Common	System Exclusive		O	O

Functions		Transmitted	Recognized
	MIDI Time Code	X	X
	Song Position Pointer	X	X
	Song Select	X	X
	Tune Request	X	X
	End of Exclusive	X	X
System Real Time	Clock	X	X
	Start	X	X
	Continue	X	X
	Stop	X	X
	Active Sensing	pass through	X
	Reset	pass through	X